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SEP 11 2001

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V-SRF-5J77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0860-01

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF RESPONSES TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE 2000 INTEGRATED SITE ENVIRONMENTAL REPORT

This letter transmits the subject comment responses to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA). Under existing agreements, responses to your comments on the Integrated Environmental Monitoring Plan (IEMP) documents are transmitted with the following IEMP submittal. However, because the next IEMP submittal (the Third IEMP Data Quarterly Summary for 2001) will not be until the end of October of 2001, these comment responses are being submitted independently.

If you have any questions or comments pertaining to these comment responses, please contact Kathleen Nickel at (513) 648-3166.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Nickel

Enclosure: As Stated

cc w/enclosure:
R. J. Janke, OH/FEMP
J. Kappa, OH/FEMP
K. Nickel, OH/FEMP
T. Schneider, OEPA-Dayton (three copies of enclosure)
G. Jablonowski, USEPA-V, SRF-5J
F. Bell, ATSDR
F. Hodge, Tetra Tech
M. Schupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald Inc./MS78

cc w/o enclosure:
K. Chaney, EM-31/CLOV
N. Hallein, EM-31/CLOV
D. Kozlowski, OH/FEMP
D. Lewis, OH/FEMP
D. Brettschneider, Fluor Fernald, Inc./MS52-5
D. Carr, Fluor Fernald, Inc./MS2
M. Frank, Fluor Fernald, Inc./MS90
T. Hagen, Fluor Fernald, Inc./MS65-2
W. Hertel, Fluor Fernald, Inc./MS52-5
S. Hinnefeld, Fluor Fernald, Inc./MS52-2
M. Jewett, Fluor Fernald, Inc./MS52-2
T. Walsh, Fluor Fernald, Inc./MS46
ECDC, Fluor Fernald, Inc./MS52-7

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RESPONSES TO U.S. EPA AND OEPA COMMENTS ON THE 2000 INTEGRATED SITE ENVIRONMENTAL REPORT

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

AUGUST 2001

U.S. DEPARTMENT OF ENERGY

RESPONSES TO U.S. EPA COMMENTS ON THE 2000 INTEGRATED SITE ENVIRONMENTAL REPORT

1. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.0 Pg #: 85 Line #: Not applicable (NA)
Original Specific Comment #: 1
Comment: The summary of radiological air particulate results for 2000 provided in the text box on the left side of the page highlights a comparison of radionuclide concentrations with U.S. Department of Energy-derived concentration guide values, which are seldom mentioned in the quarterly environmental monitoring reports. In future annual reports, the summary should focus on key findings such as compliance with the 10-millirem (mrem) annual effective does equivalent in the National Emissions Standards for Hazardous Air Pollutants, Subpart H.
Response: The diverse audience of the 2000 ISER has different informational needs than the audience for the IEMP quarterly summaries, which are prepared almost exclusively for the EPA and OEPA. Comparing radionuclide concentrations with U.S. DOE-derived concentration guide values is done in order to meet some of informational needs of other stakeholders. The few sentences concerning this comparison to the concentration guide values informs the reader that the DOE has established these guide values for assessing dose based on a single exposure mode, and that monitoring data indicate that the average particulate concentrations for 2000 are less than one percent of these DOE guide values. Compliance with the 10-millirem (mrem) annual effective dose equivalent in the National Emissions Standards for Hazardous Air Pollutants, Subpart H, is addressed in Chapter 6 of the ISER and is included in the "Results in Brief" text box on page 107. The summary of air particulate results in the 2000 ISER is consistent with what has been provided in past ISERs.
Action: None.

2. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5-1 Pg #: 89 Line #: NA
Original Specific Comment #: 2
Comment: Table 5-1 presents total uranium, total particulate, and thorium 230 concentrations in air for 1999 and 2000. However, neither the accompanying text nor Appendix C (Supplemental Air Information) provides the data needed to verify the minimum, maximum, and average thorium 230 concentrations listed in Table 5-1. Future annual reports should include enough data to allow independent verification of all summary statistics presented.
Response: Short of providing each biweekly data result for the three analytes for each of the 18 air monitoring stations in the ISER, which is equivalent to approximately 1,400 values, there are several means by which EPA can independently verify the data summarized in Table 5-1. Appendix C contains tables (Table C.1-2 through C.1-6) of summary statistics by isotope for each monitoring station as well as figures (graphs in Figures C.1-1 through C.1-39) indicating the biweekly result by isotope for each station. Additionally, the IEMP quarterly summaries provide equivalent tables with summary statistics by isotope and monitoring station for each quarterly period. Furthermore, the IEMP Data Information Site also contains all of the biweekly air particulate data by annual quarters, via downloadable files, necessary to perform an independent verification of the information in Table 5-1.
Action: None.

3. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.4.1 Pg #: 96 Line #: NA
Original Specific Comment #: 3
Comment: The text states that Appendix C, Attachment 2 includes a "graphical display of average headspace radon concentrations" in K-65 Silos 1 and 2. However, this graphical display does not appear in Appendix C, Attachment 2. This graphical display should be included in future annual reports.

Response: Agree. The graphical display of average headspace radon concentrations in K-65 Silos 1 and 2 was inadvertently left out of Appendix C. The graph will be included in future annual reports and has been added to the standard graphs provided in the IEMP quarterly summary. Refer to Figure5-9 in the Second IEMP Data Quarterly Summary for 2001.

Action: Include graphical display of average headspace radon concentrations in K-65 Silos 1 and 2 in future annual reports.

4. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.3 Pg #: 109 Line #: NA
Original Specific Comment #: 4

Comment: The text states that the estimated radiation dose from consumption of locally grown produce increased from 0.1 mrem in 1997 to 0.9 mrem in 2000. However, the text incorrectly implies that this increase was caused primarily by the addition of thorium analyses for the 2000 samples (the 1997 produce samples were analyzed for uranium only). The uranium contribution to the 2000 radiation dose was 0.46 mrem, so the estimated dose would have increased even if thorium had not been analyzed for in the 2000 samples.

Response: DOE agrees with the conclusion of this comment concerning an increase in the uranium results for 2000 versus 1997. While it is true that the estimated dose due to uranium increased between 1997 and 2000, DOE did not imply that the addition of thorium-230 was the primary cause of the increase in the dose estimate. As the text states, there were other factors contributing to the increase, and the reader is referred to Appendix C.4 for the specific additional information. Discussion of this technical information was placed in the appendix in an attempt to provide a concise summary of information in the ISER text. The other factors are summarized as follows:

- The limited number of background samples in 2000 for specific vegetable types, and the lack of historical data on thorium-230 concentrations in produce, did not permit the average uranium and thorium-230 concentrations in locally grown produce to be background-corrected for some specific produce types. Not correcting for the naturally occurring concentrations of radionuclides in produce leads to an overestimation of dose that is attributable to FEMP emissions.

- The method of using one half of the detection limit for uranium and thorium-230 sample results that were less than detectable may increase the average concentration of uranium and thorium-230 in produce. This, in turn, may conservatively overestimate the dose from produce.

Action: The DOE plans to ensure that a sufficient number of background produce samples are available as a result of evaluating the 2000 produce data. The 2003 ISER text concerning dose estimates from produce will also be clear on the isotopic results that cause any increases or decreases in the dose from produce consumption.

RESPONSES TO OEPA COMMENTS
ON THE 2000 INTEGRATED SITE ENVIRONMENTAL REPORT

5. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Pg #: Line #: NA Code: C
Original Comment #: 1

Comment: The ISE Report seems to present itself in the form of a compliance-based report and less "public" oriented. The past expectations of this report has been to address all stakeholders and read with a "public friendly" approach. However, it seems it has completely fallen away from this idea.

Response: DOE disagrees with OEPA that the ISER has "fallen away" from the idea of being public oriented. The format, content, and discussion of FEMP regulatory compliance and environmental monitoring data in the 2000 ISER are consistent with what has been provided in past ISERs. Also, as in the past, public affairs experts at the FEMP were involved in the review and development of the ISER to ensure that it is appropriately oriented to the general public's needs. DOE also adds that the ISER is prepared in a manner so that it is useful and reader-friendly for a widespread public distribution. This includes an array of Fernald stakeholders ranging from academia and technical professionals to legislators and community activists.

Action: Continue to prepare ISERs in a manner so that they are useful for a widespread distribution among Fernald stakeholders.

6. Commenting Organization: Ohio EPA Commentor: DSW
Section #: General Pg #: NA Line #: NA Code: C
Original Comment #: 2

Comment: One of the objectives of the sites monitoring program should be to address stakeholder concerns regarding undue adverse effects to the environment. Data to support this may not be included in compliance sampling alone, yet the site appears to only address regulatory compliance issues. This is demonstrated by the focus of the annual report on compliance with regulatory limits and by the statement of objectives given at the Fernald cleanup progress briefing (July 2000) where the objectives of the IEMP were given as 1) ensure protection of public health, 2) ensure compliance with regulatory limits, and 3) provide assessment and continual feedback to remedial projects. Addressing stakeholder concern and limiting undue adverse effects to the environment was conspicuously absent. Please continue to consider this as one of the objectives of your sampling program.

Response: DOE agrees that one of the objectives of the site's environmental monitoring program is to address stakeholder concerns and limit undue adverse effects to the environment. However, DOE disagrees with OEPA that the FEMP's environmental monitoring program and the 2000 ISER does not accomplish this objective. DOE believes that the perception that the ISER is becoming more focused on compliance-based reporting and less focused on addressing stakeholder concerns is related to the fact that stakeholder concerns have diminished considerably since the early stages of the FEMP cleanup. Moreover, DOE believes that the vast majority of stakeholder concerns are addressed by ensuring protection of public health, ensuring compliance with regulatory limits, and providing assessment and continual feedback to remedial projects in it's reports (the objectives noted in the comment). Should valid stakeholder concerns arise over any environmental or public health aspect of the FEMP remediation, the relevant IEMP programs may be modified accordingly, and the ISER would summarize the information collected base on the concerns.

With regard to the objective of limiting undue adverse effects to the environment, DOE is accomplishing this through providing assessment and continual feedback to the remedial projects (objective 3, as noted in the comment). This is evidenced by measures implemented at WPRAP to limit airborne thorium emissions. While these emissions were not close to exceeding any regulatory levels, DOE took measures (related to both the project and to the

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environmental monitoring program) to ensure that these emissions remained as low as reasonably achievable, and that there were no undue adverse effects to the environment. This is also evidenced by the evaluation of surface water BTVs. While not a regulatory limit per se, a discussion of surface water BTV exceedances is provided in the ISER to demonstrate DOE's intent to limit undue adverse effects to the environment.

Finally, with regard to the objectives stated at the cleanup progress briefing, DOE provided these three objectives to serve as talking points about why environmental monitoring is performed at Fernald and how the data are used. DOE did not intend the three objectives referenced in the comment to be the all-encompassing objectives of the IEMP program and reports. Should other valid concerns arise outside of the data covered, DOE will certainly address them in the annual ISERs.

Action: Continue to prepare ISERs with the objective of addressing stakeholder concerns.

7. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.2/Third Bullet Pg #: 27 Line #: NA Code: C
Original Comment #: 3
Comment: In the Third Bullet, it discusses that a ground penetrating radar scan was performed in an area adjacent to the SWUs. Is the text referring to the Carolina Area?
Response: The text is referring to what has informally become known as the "Carolina Area".
Action: None.

8. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.5/Fifth Bullet Pg #: 32 Line #: NA Code: E
Original Comment #: 4
Comment: In the Fifth Bullet, the word "approach" is missing a letter "p."
Response: Agree. Most typographical and formatting errors are the result of the ISER requiring electronic file conversion between software programs during development (from a word processing program to a document publication program), and the limited time available for review of the document after this conversion.
Action: For next years' ISER, DOE will evaluate ways to minimize these types of errors with the goal of eliminating them.

9. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.1.3/Sixth Bullet Pg #: 34 Line #: NA Code: E
Original Comment #: 5
Comment: In the Sixth Bullet, "thorium" is misspelled.
Response: See the response to comment 8.
Action: See action to comment 8.

10. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.1.5/Gray Box Pg #: 57 Line #: NA Code: E
Original Comment #: 6
Comment: In the gray box to the left of the page, the description of the Geoprobe® and its operation stops in mid-sentence. Please complete the paragraph.
Response: See response to comment 8. This error was identified and corrected for the color version of the ISER.
Action: See action to comment 8.

11. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.2 Pg #: 70 Line #: Last line in section Code: C
Original Comment #: 7
Comment: This states that no new storm water controls were installed during 2000, however, at least in the southern waste units, controls were installed for the excavation of the carolina area and some silt fence is still in place as a result of that excavation, also the installation of wells at

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the pilot plant drainage ditch required use of a silt fence on the northern edge of activities, silt fence and a retention basin was installed in A2PIII (radium hot spot).

Response: Agree with the comment. However, the intent of this section is to identify major storm water controls such as sediment basins or diversion ditches. Silt fencing, while important, is more routine in nature.

Action: Future reports will make this distinction in describing storm water controls.

12. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3.1 & B.1.1.2 Pg #: 77 and B.1-5 Line #: 2nd & 3rd paragraph Code: C
Original Comment #: 8

Comment: Regarding the groundwater FRL exceedences in these groundwater sensitive areas, what is the status of the groundwater, with respect to these contaminants, in the vicinity of these sampling points, for example Attachment A.4 indicates that Tc-99 has not exceeded the groundwater FRL, but is it close to the FRL in monitoring wells in the vicinity of SWD-03? Do these values indicate upward trends (in groundwater or surface water) in these areas?

Response: The quarterly uranium plume maps depict the status of uranium concentration in the aquifer near these cross-media sampling points. Regarding the Technetium-99 and zinc groundwater FRL exceedances at location SWD-03: DOE is unsure of the commentor's reference to Attachment A.4 since that attachment pertains to non uranium groundwater FRL exceedances. However, per the commentor's request, DOE is providing concentration versus time graphs for zinc and technetium-99 at:

- SWD-03 (Figures 1 and 2)
- Monitoring Well 2009 (Figures 3 and 4); and,
- Monitoring Well 3009 (Figures 5 and 6).

These graphs are provided as attachments to these comment responses. Monitoring Wells 2009 and 3009 are just downgradient of Paddys Run slightly downstream from where the Pilot Plant drainage ditch empties into Paddys Run. The graphs indicate technetium concentrations in the wells are far below the groundwater FRL and the fourth quarter 2000 groundwater FRL exceedance for technetium at location SWD-03 appears to be anomalous. Regarding zinc, the groundwater monitoring wells indicate that the zinc concentrations in groundwater have been below the FRL for the last several years despite several groundwater FRL exceedances at SWD-03. An evaluation of these plots fails to identify an upward trend for either constituent at any of these three locations.

Action: No action required.

13. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3.3 Pg #: 81 Line #: Figure 4-8 Code: E
Original Comment #: 9

Comment: The scale on the left-hand Y axis appears to be incorrect. The correct total mass of uranium discharged during 2000 was 171 kg but appears to be approximately one half that amount on the scale on figure 4-8.

Response: DOE believes that the OEPA is referring to the right-hand y-axis, which displays kilograms (pounds are displayed on the left y-axis). DOE agrees the scale for kilograms is incorrect, as values are one-half of what they should be.

Action: See action to comment 8.

14. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.0 Pg #: 85 Line #: Code: C
Original Comment #: 10

Comment: The second paragraph states ". . . the public *may* be exposed to radiation from the FEMP . . ." (italics added). The phrase "may" should be changed to " . . . the public *is* exposed to radiation from the FEMP . . . " The data presented in this report and the appendices clearly indicate that the public is exposed to radiation from the FEMP through

the air pathway. The exposure is relatively low compared to NESHAPs standards, but is clearly present.

Response: It appears that the commentor has taken the word "may" out of context by suggesting that the DOE is somewhat ambivalent as to whether a member of the public is actually exposed to radiation from the FEMP. The purpose of this sentence is to orient the reader to the fundamental air pathway as a route of exposure, not to make a conclusion of the air results for 2000. As should be evident from the Executive Summary and Chapter 6 of the 2000 ISER, there is no ambivalence as to the fact that emissions from Fernald deliver doses to members of the public in close proximity to the FEMP. The context in which the term was used is appropriate due to the fact that some members of the public almost certainly receive a FEMP-induced dose via the air inhalation pathway while other members of the public certainly receive no dose from FEMP air particulate emissions.

Action: None.

15. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.0 Pg #: 90 Line #: Code: C
Original Comment #: 11

Comment: The discussion in the third paragraph explaining the change in contribution from the different radionuclides is somewhat misleading. The discussion talks to the decrease in percentage of the uranium contribution as though uranium emissions decreased in 2000. The fact is that thorium-230 emissions increased, and became the major contributor to dose, while uranium emissions remained essentially unchanged from 1999 to 2000.

Response: DOE recognizes that the presentation of the information contained in the referenced paragraph could be improved by placing regulatory compliance information in one paragraph and information on the percentage of dose from uranium and thorium in a separate paragraph(s). Combining this level of technical information in a single paragraph was an editorial error.

Action: For next years' ISER, DOE will improve the presentation and communication of information.

16. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 7.1 Pg #: 116 Line #: Figure 7-1 Code: E
Original Comment #: 12

Comment: The designation of "radium hot spot" could be misunderstood by the public not familiar with the remediation of that area. Perhaps a better description could be chosen, such as A2PIII Bur Reed Wetland, or something similar.

Response: DOE agrees the use of this terminology does not lend itself to public-friendliness. Note that in the text on page 118, the term "radium hot spot" is not used.

Action: In future ISERs, do not use terminology that may be unfamiliar to the public.

17. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section #: Attachment A.1 Pg #: A.1-4 Line #: 6 Code: C
Original Comment #: 13

Comment: How did the low water levels measured in Monitoring Wells 2625 and 2899 possibly affect the water quality? Were high turbidity levels observed in the samples?

Response: High turbidity levels were observed in the samples. The turbidity level for both samples was > 999 NTUs.

Action: No action required.

18. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section #: Attachment A.2 Pg #: A.2-4 Line #: 15 Code: C
Original Comment #: 14

Comment: Given the close proximity of Injection Wells 22109 and 22240, re-injection probably also contributes significantly to the declining concentrations seen in Monitoring Well 3069.

Response: Comment acknowledged.

Action: No action required.

19. Commenting Organization: Ohio EPA Commentor: HSI GeoTrans, Inc.
Section #: Attachment A.6 Pg #: A.6-9 Line #: 14 Code: C
Original Comment #: 15
Comment: The text indicates that the sampling of Monitoring Well 22205 and the new up gradient monitoring well at Cell 4 is being delayed consistent with the delay in the Cell 4 construction schedule. The text should note the period of time that these wells will be monitored prior to the initial placement of impacted material in Cell 4.
Response: This information is not provided due to uncertainty of the OSDF construction schedule at the time of production. The wells will be monitored for at least several months prior to waste placement. Recent plans called for as much as a 2-year pre-waste placement monitoring period. However, with the recent planned acceleration of Cells 4 and 5, two years of pre-waste placement sampling may not be possible. Plans for the installation of the remaining OSDF monitoring wells are currently in the works (the PSP was submitted to the EPA's the week of August 13) so that pre-waste placement baseline sampling can begin for Cells 4 and 5 later this year.
Action: No action required.

20. Commenting Organization: Ohio EPA Commentor: DSW
Section #: B1.1 Pg #: B.1-2 Line #: Last line Code:
Original Comment #: 16
Comment: We are extremely pleased that the corrective actions (increased communication and earlier sampling per response to comment six, first quarter 2000 report) have resulted in no additional samples being missed.
Response: Agree with comment. DOE and Fluor Fernald Inc. appreciate the positive feedback on the surface water sampling program.
Action: None.

21. Commenting Organization: Ohio EPA Commentor: DSW
Section #: B.1.1.4 Pg #: B.1-5 Line #: Last Code: C
Original Comment #: 17
Comment: There appears to be an ongoing issue with the north drainage ditch and the rail yard. The consensus appears to be that increased turbidity is coming from this area for unknown reasons. Also, increases in total uranium seem to be coming into the ditch from the landfill. Considering these issues, it appears as though stating that any additional controls or changes are warranted may not be prudent. It would appear as though further investigation may indeed be needed and perhaps additional controls in these areas. Also further investigation may be warranted in the areas that have exceeded groundwater FRLs rather than depending entirely on the groundwater remediation, for example the Tc-99 result, was that from a leaking BSL pipe or possibly some other cause. It would seem as though some additional investigation to answer these kinds of questions would be initiated.
Response: DOE partially agree with the comment. Regarding the north railyard, DOE believes we have responded by investigating the increasing uranium by undertaking a sampling program, the results of which appeared to pinpoint the sanitary landfill as the source. However, while slightly elevated, DOE does not believe the concentrations warrant a specific response action. Additionally, DOE believes the turbidity issues will subside once the leachate line project has been stabilized. Investigations into technetium-99 have revealed no specific source such that additional sampling and or controls could be implemented in a sufficient manner.
Action: None.

22. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C-.4 Pg #: C.4-1 Line #: Last paragraph Code: C
Original Comment #: 18